

# Hunting behaviour of the Mantled Hawk *Leucopternis polionota* and the White-necked Hawk *L. lacermulata* in southeastern Brazil

by Paulo Martuscelli

Received 9 May 1995

Two species of hawks in the genus *Leucopternis* occur in the Atlantic forest of southeastern Brazil: the larger, rather buzzard-like Mantled Hawk *L. polionota* and the smaller, more slender White-necked Hawk *L. lacermulata*. Both species are uncommon, the first one being considered near-threatened and the latter rare (Collar *et al.* 1992). Almost nothing is known of the biology of either species, except for a few anecdotal observations (Schubart *et al.* 1965, Sick 1993). During 1990 I was able to make several observations of the hunting behaviour of both species at Ilha do Cardoso State Park (c. 25°03'S, 47°53'W). The area is entirely covered by forest from the coastal plain to the island peaks, with a maximum altitude of 950 m (see Barros *et al.* 1991 for site description).

An individual Mantled Hawk was followed almost daily between 29 May and 11 June, except during rainy spells. In all I accumulated 34 h of observations. During this period the hawk used an area of 5 ha at the transition between the coastal plain and a small hill 80 m high, adjoining a road and other open spaces. Vegetation there was fairly low, the tallest trees reaching 10 m. Two different hunting strategies were observed: hunting passing birds from a perch, and ambushing by the side of a fruiting or flowering plant.

In the study area the hawk was seen to use three perches, usually 5–7 m high, from which it watched for prey. After changing a perch, the hawk was not seen using it again. The longest period the hawk was known to use a perch was three days. The perched hawk was easily visible from a distance, as it used well exposed branches from where it had a broad view of its environs. The hawk took its prey after a rapid flight from its perch aimed at a passing bird, returning to its perch to eat it. These flights were usually shorter than 15 m. Of five observed hunting attempts, three were successful: a White-necked Thrush *Turdus albicollis*, a Squirrel Cuckoo *Piaya cayana* and a Red-tailed Amazon *Amazona brasiliensis*. The predation on the parrot was especially interesting, as the hawk used a perch close to the night roost that a pair of amazons were using every night, striking when they approached. The hawk caught one of the parrots in the air, both falling into the forest amid a violent struggle and loud cries by the amazon.

On six different occasions the hawk perched beside a *Norantea brasiliensis* (Marcgraviaceae), a climbing shrub which was producing abundant inflorescences that attracted many birds. A fruiting tree, *Schinus terebenthifolius* (Anacardiaceae), was close by, also attracting birds. The hawk perched amid the sprawling branches of the *Norantea*, which were 8 m above the ground, watching the birds that came to feed

at the flowers, mostly tanagers and hummingbirds. It caught its prey after a short, quick flight from its perch, returning to it with the captured prey. Of 24 attempts, the hawk was successful in three, capturing a White-tailed Trogon *Trogon viridis*, a Red-necked Tanager *Tangara cyanocephala* and a Sayaca Tanager *Thraupis sayaca*.

Apparently the same strategy was employed, by what was probably the same bird, in the successful capture of a Dusky-legged Guan *Penelope obscura*, which was eating the fruits of a *Eugenia bimarginata* (Myrtaceae), a shrub only 3 m high; this was observed outside the main study period. I saw only the moment of the strike, and am not sure if the hawk attacked from a perch or was soaring.

An individual White-necked Hawk was followed between 13 and 22 June in the same area, totalling 15 h of observation. This hawk was observed once following an army ant *Eciton burchelli* swarm, with which was associated a flock consisting of White-backed Fire-Eye *Pyriglena leucoptera*, Plain-brown Woodcreeper *Dendrocicla fuliginosa*, House Wren *Troglodytes aedon*, Grey-hooded Attila *Attila rufus*, White-necked Thrush *Turdus albicollis*, Creamy-bellied Thrush *T. amaurochalinus* and Rufous-bellied Thrush *T. rufiventris*. These birds ignored the hawk, chasing insects side by side with it. The hawk perched at most 1.5 m from the ground, descending to pick insects with its bill. Large insects, such as grasshoppers and walking-sticks, were grabbed in the talons and eaten on the perch. The ants disturbed a 15 cm long land snail *Megalobulimus paranaguensis*, which was taken in the talons. The hawk flew with it to the top of a tree 8 m high and dropped it to the ground. It then carried it up again and repeated the process twice until the shell was broken and it could eat the contents (Martuscelli 1991).

On another occasion the hawk was observed walking on the lawn around the park's headquarters, following a lawnmower together with Southern Lapwings *Vanellus chilensis* and thrushes, and picking up grasshoppers, but keeping its distance from the machine.

Once the hawk was perched by the side of a tree where a couple of Brazilian Tanagers *Ramphocelus bresilius* were exploring an epiphytic bromeliad for food. The tanagers disturbed a big walking-stick and tried to subdue it as it walked from the bromeliad, when the hawk made a short flight, caught the insect, and flew off with it.

This hawk was also observed to use a similar strategy to the Mantled Hawk, perching by the side of a flowering tree, but its attacks were directed at the insects that were flying around it, mainly beetles and dragonflies.

Another White-necked Hawk was found after the study period, more than 10 km away, in taller (20–25 m high) forest where the plain meets the mountain slope. This hawk was following a group of seven Brown Howler Monkeys (*Alouatta fusca*), capturing insects disturbed by the monkeys. This continued for 20 minutes, until the hawk departed.

The Mantled Hawk displayed strategies similar to many buteonine hawks (Brown & Amadon 1989), hunting from a perch. Apparently birds are a major food item, a fact already mentioned in the literature (Brown & Amadon 1989, Sick 1993). The food habits of the

White-necked Hawk are more surprising, as the species seems to specialise on invertebrates, mainly insects, using several techniques to take them, including the use of other animals (humans with lawn-mowers, monkeys and army-ants) as aids in finding them, and apparently preferring insects to birds. In Costa Rica, the Semiplumbeous Hawk *Leucopternis semiplumbea* is also known to associate with monkeys (Boinski 1988). Also, the behaviour displayed while preying on the snail, and the fact that other birds ignored the White-necked Hawk while hunting insects with it, strengthen the conclusion that the White-necked Hawk is an invertebrate specialist, apart from other hawks in its genus.

### Acknowledgements

I wish to thank M. Milanelo for help and support during fieldwork. F. Olmos helped with drafting an initial version of the manuscript.

### References:

- Barros, F., Fiuza de Melo, M. M., Chiea, S., Kirizawa, M., Wanderley, M. G. & Jung-Mendacoli, S. L. 1991. *Flora Fanerogamica da Ilha do Cardoso*. Vol. 1. Instituto de Botanica de São Paulo.
- Boinski, S. & Scott, P. E. 1988. Association of birds with monkeys in Costa Rica. *Biotropica* 20: 136–143.
- Brown, L. & Amadon, D. 1989. *Eagles, Hawks and Falcons of the World*. 2nd edn. Wellfleet.
- Collar, N. J., Gonzaga, L. P., Krabbe, N., Madrono Nieto, A., Naranjo, L. G., Parker, T. A. & Wege, D. C. 1992. *Threatened Birds of the Americas: the ICBP-IUCN Red Data Book*. I.C.B.P., Cambridge, U.K.
- Martuscelli, P. 1991. Predação de *Megalobulimus paranaguensis* Pelsbry & Ihering, 1990 (Megalobulimidae, Molusca) por *Leucopternis lacernulata*. I Congresso Brasileiro de Ornitologia. Pará, Brasil.
- Sick, H. 1993. *Birds in Brazil: a natural history*. Princeton Univ. Press.
- Schubart, O., Aguirre, A. C. & Sick, H. 1965. Contribuição para o conhecimento da alimentação das aves brasileiras. *Arq. Zool. São Paulo* 12: 95–249.

Address: Paulo Martuscelli, Instituto Florestal de São Paulo, Caixa Postal 194, Peruibe (SP), 11750-970, Brazil.